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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,694

05/10/2007

Michael Schorn

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8006

39600

7590

03/15/2010

SOFER & HAROUN LLP.

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EXAMINER

SY, MARIANO ONG

ART UNIT

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3657

MAIL DATE

DELIVERY MODE

03/15/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,694	Applicant(s) SCHORN ET AL.	
	Examiner MARIANO SY	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/23/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

2. The disclosure is objected to because of the following informalities:

Page 8, par. [0030], line 6 "3/105" should be --3/100--,

Page 26, Abstract, delete " (Figure 1) ".

Appropriate correction is required.

3. Claim 17 is objected to because of the following informalities:

Claim 17, lines 7-8 "each of said outer shells a through opening" should be --
each of said outer shells, a through opening--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "it is integral in rotation and in translation" in line 4. It is vague and indefinite as to what the word "it" stands for.

Claim 1 recites the limitation "to clamp it" in line 8. It is vague and indefinite as to what the word "it" stands for.

Claim 1 recites the limitation "the latter" in line 9. It is vague and indefinite as to what the word "latter" stands for.

Claim 1 recites the limitation "the ratio of thickness to circumferential extension" in lines 14-15. It is vague and indefinite regarding as to "circumferential extension" of what?

Claim 4 recites the limitation "preferably" in line 2. It is indefinite and unclear if it is included or precluded.

Claim 4 recites the limitation "the ratio of thickness to circumferential extension" in line 3. It is vague and indefinite regarding as to "circumferential extension" of what?

Claim 4 recites the limitation "preferably" in line 4. It is indefinite and unclear if it is included or precluded.

Claim 4 recites the limitation "3/105" in line 4. It is indefinite and unclear if Applicants were referring to $-3/100-$.

Claim 5 recites the limitation "preferably" in line 4. It is indefinite and unclear if it is included or precluded.

Claim 6 recites the limitation "it is integral" in line 4. It is vague and indefinite as to what the word "it" stands for.

Claim 6 recites the limitation "the latter" in line 9. It is vague and indefinite as to what the word "latter" stands for.

Claim 6 recites the limitation "the ratio of thickness to circumferential extension" in lines 14-15. It is vague and indefinite regarding as to "circumferential extension" of what?

Claim 6 recites the limitation "said shell-type connecting structure" in line 16. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "preferably" in line 17. It is indefinite and unclear if it is included or precluded.

Claim 7 recites the limitation "preferably" in line 2. It is indefinite and unclear if it is included or precluded.

Claim 8 recites the limitation "said shell-type connecting structure" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "preferably" in line 3 (two occurrences). It is indefinite and unclear if it is included or precluded.

Claim 8 recites the limitation "corresponds to an angle of aperture of a sector of circle" in lines 1-2. It is vague and indefinite as to what Applicants were conveying.

Claim 9 recites the limitation "preferably" in line 4. It is indefinite and unclear if it is included or precluded.

Claim 10 recites the limitation "preferably" in line 4. It is indefinite and unclear if it is included or precluded.

Claim 11 recites the limitation "the shell/shells" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the shell/shells" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "said shell/shells" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "adjacent to it" in line 4. It is vague and indefinite as to what the word "it" stands for.

Claim 21 recites the limitation "it is integral in rotation and in translation" in line 4. It is vague and indefinite as to what the word "it" stands for.

Claim 21 recites the limitation "to clamp it" in line 8. It is vague and indefinite as to what the word "it" stands for.

Claim 21 recites the limitation "the latter" in line 9. It is vague and indefinite as to what the word "latter" stands for.

Claim 21 recites the limitation "the ratio of thickness to circumferential extension" in lines 14-15. It is vague and indefinite regarding as to "circumferential extension" of what?

Claim 22 recites the limitation "in which said one or more shells have a double curvature, concave viewed from the disc space, forming a first arc which extends transversely to the plane of the brake disc and a second arc which lies in said plane of

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the brake disc" in lines 1-4. It is vague and indefinite as to what Applicants were conveying.

Claim 22 recites the limitation "the plane of the brake disc" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "it is integral in rotation and in translation" in line 4. It is vague and indefinite as to what the word " it " stands for.

Claim 26 recites the limitation "to clamp it" in line 8. It is vague and indefinite as to what the word " it " stands for.

Claim 26 recites the limitation "the latter" in line 9. It is vague and indefinite as to what the word "latter" stands for.

Claim 26 recites the limitation "the ratio of thickness to circumferential extension" in lines 14-15. It is vague and indefinite regarding as to "circumferential extension" of what?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions

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covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-13, 21, 22, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US 6,367,595).

Mori et al. disclosed a disc-brake having a caliper comprising two side walls which delimit a space to accommodate a portion of a brake disc 19 wherein one of said side walls comprises means for attaching 1a the caliper to a vehicle and the side walls are connected to each other by a connecting structure 18, wherein each of said side walls accommodating at least one pad 13b, wherein the caliper comprises thrust means 12 secured to said side walls, wherein said connecting structure comprises one or more shells, arc-shaped or arranged along an arc, connected so as to be integral with both side walls along outer circumferential edges thereof.

However Mori et al. was silent to disclose wherein the slenderness of said one or more shells expressed as the ratio of thickness to circumferential extension of said one or more shells relative to an axis of rotation of the brake disc is between 5/100 and 17/100; wherein the connecting structure having a radius of 180 mm to 220 mm; wherein the average thickness of the shell is less than 20 mm or between 5 mm to 15 mm; wherein the circumferential extension of at least one of said shells is at least

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double its axial extension relative to the axis of rotation of the disc; wherein the total area of through opening is less than 40% of the total area of one or more shells including that of the through opening; wherein the slenderness of said one or more shells, including the through opening, expressed as the ratio of thickness to circumferential extension of the through opening relative to the axis of rotation of the brake disc is between $2/100$ and $4/100$; wherein the slenderness of said one or more shells in the area of the seatings for the pad, expressed as the ratio of thickness to axial extension relative to the axis of rotation of the brake disc is between $3/35$ and $10/35$; wherein the slenderness of said one or more shells in the areas of the walls outside the seating for the pads, expressed as the ratio of thickness to axial extension relative to the axis of rotation of the brake disc is between $2/7$ and $5/7$.

It would have been obvious to one of ordinary skill in the art to provide the caliper of Mori et al. with the above range of limitations as a matter of engineering design choice since the above range of limitations are some of the factors for designing that depends on the size of the caliper, the number of through openings on the connecting structure (number of shells), the size of the piston or pistons for the braking torque needed, the size of the rotor, the type of application in order to provide optimization of the design of the disc brake.

9. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. '595 in view of Reeves (WO 03/071151-A1).

Mori et al. disclosed wherein the connecting structure comprises a single shell with a through opening but failed to disclose a substantially circular through opening and also failed to disclose three substantially circular openings equidistant from each other in the circumferential direction and also arranged halfway between the two side shells; wherein the three openings are arranged substantially in the area of the caliper in which the seatings for the pads are located.

Reeves teaches, as shown in fig. 1, a caliper 10 with connecting structure comprises a single shell with three through openings equidistant from each other in the circumferential direction and also arranged halfway between the two side shells; wherein the three openings are arranged substantially in the area of the caliper in which the seatings for the pads are located.

It would have been obvious to one of ordinary skill in the art to provide the caliper of Mori et al. with three through openings equidistant from each other in the circumferential direction and also arranged halfway between the two side shells; wherein the three openings are arranged substantially in the area of the caliper in which the seatings for the pads are located, as taught by Reeves, and also with substantially circular openings, as a matter of engineering design choice depending upon the type and size of application in order to provide optimization of the design of the disc brake.

10. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. '595 in view of Czich et al. (US 4,709,789).

Mori et al. disclose wherein the connecting structure comprises two outer shells arranged at opposite ends of the caliper and the through opening is substantially rectangular. However Mori et al. failed to disclose a central shell arranged approximately halfway between said outer shells, wherein the connecting structure delimits between the central shell and each of said outer shells, a through opening having a circumferential extension less than the circumferential extension of the adjacent shells.

Czich et al. teaches, as shown in fig. 1, a caliper having a central shell arranged approximately halfway between said outer shells, wherein the connecting structure delimits between the central shell and each of said outer shells, a through opening having a circumferential extension less than the circumferential extension of the adjacent shells.

It would have been obvious to one of ordinary skill in the art to merely provide the caliper of Mori et al. with the known central shell arranged approximately halfway between said outer shells, wherein the connecting structure delimits between the central shell and each of said outer shells, a through opening having a circumferential extension less than the circumferential extension of the adjacent shells, as taught by Czich et al., as a matter of engineering design choice depending upon the type and size of application in order to provide optimization of the design of the disc brake.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. '595 in view of Czich et al. '789 as applied to claims 6, 17, and 19 above, and further in view of Demoise, Jr. (US 6,039,155).

Mori et al. as modified, failed to disclose wherein the central shell delimits a further through opening arranged approximately at the center of the central shell, said further through opening having a circumferential extension less than that of each of the portions of the central shell.

Demoise, Jr. teaches, as shown in fig. 3, the use of a caliper wherein the central shell delimits a further through opening arranged approximately at the center of the central shell, said further through opening having a circumferential extension less than that of each of the portions of the central shell.

It would have been obvious to one of ordinary skill in the art merely to provide the caliper of Mori et al. with known central shell that delimits a further through opening arranged approximately at the center of the central shell, said further through opening having a circumferential extension less than that of each of the portions of the central shell, as taught by Demoise, Jr., as a matter of engineering design choice depending upon the type and size of application in order to provide optimization of the design of the disc brake.

12. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. '595 in view of Way (US 5,558,183).

Mori et al. failed to disclose wherein on the radially outer side of at least one of said shells, a groove is made for accommodating a pipe for fluid to pass between hydraulic cylinders arranged in the two side walls; wherein each of the two side walls delimits three seatings for hydraulic cylinder/piston units; wherein the three seatings are arranged on circumferences with a radius decreasing in the direction of movement of the brake disc corresponding to forward travel of the vehicle.

Way teaches, as shown in fig. 1-3, a caliper wherein on the radially outer side of at least one of said shells, a groove is made for accommodating a pipe for fluid to pass between hydraulic cylinders arranged in the two side walls; wherein each of the two side walls delimits three seatings for hydraulic cylinder/piston units 16, 17, 18; wherein the three seatings are arranged on circumferences with a radius decreasing in the direction of movement of the brake disc corresponding to forward travel of the vehicle.

It would have been obvious to one of ordinary skill in the art merely to provide the caliper of Mori et al. with known groove made for accommodating a pipe for fluid to pass between hydraulic cylinders arranged in the two side walls and each of the two side walls delimits three seatings for hydraulic cylinder/piston units 16, 17, 18; wherein the three seatings are arranged on circumferences with a radius decreasing in the direction of movement of the brake disc corresponding to forward travel of the vehicle, as taught by Way, in order to provide a rigid attachment for the pipe in order to avoid movement to the joints on the pipe so as to minimize leaks and also the diameter of each piston can be made smaller and the braking force can be distributed thereby reduction in size.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Burnett et al.	(US 3,261,429)
Fay	(US 3,734,248)
Shimura	(US 5,277,279)
Leist et al.	(US 5,282,521)
Rike	(US 5,538,105)
McCormick et al.	(US 5,535,856)
Collin	(US 5,613,577)
Cornolti et al.	(US 6,466,766)
Barbosa et al.	(US 2004/0188188)

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIANO SY whose telephone number is (571)272-7126. The examiner can normally be reached on Mon.-Fri. from 8:30 A.M. to 2:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi, can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 2, 2010

/MS/

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art
Unit 3657